



amended Sequence Listing.txt

[Sequence Listing]

<110> CJ Corporation

<120> An alkaline lipase from *Vibrio metschnikovii* RH530 and a nucleotide sequence encoding the same

<160> 7

<170> KopatentIn 1.71

<210> 1

<211> 2578

<212> DNA

<213> *Vibrio metschnikovii* RH530

<400> 1

| | |
|---|------|
| agcttgcaact ttatcagcca atacttgcat cggtaaactcg gcgggcactt gtgcccagtg | 60 |
| gcggcggtcta cgtacttcag agattaaggc catgactagc gtttcatata aaatggtgtc | 120 |
| tcgccacgta ccttgaatgg cgatacgag ctggcggtttg ccctcttgct tgaggatccc | 180 |
| gatttcaatt tgccgatcgg gttgaaaatg gaaatagcgt aatgactgta aaaaagtacg | 240 |
| attcaaatga ggtgcatgct gctctaaata aacaatgtcg gcatccgaaa agcgcaatga | 300 |
| agccaactga ttgatttctt ggcgtacttc ctctaataaa tcgctaattgt cttcatcact | 360 |
| gcgcacaatc aattcatagc gcacctcaac atccggatac aacgaatgaa cggcctgcat | 420 |
| catattgatt ttataggcat caagatccaa taaactgcgg ataaaaagag gagaaaatag | 480 |
| gcgatcgctc atgatgatgc catcctttcg ttcgggtttca ttcagtcatt acgttagtaa | 540 |
| caacgtgttg ctaactttgg gcgaacaata aagtaccctt gtaagtttgt caacttttgt | 600 |
| gacaaaccta gtcagtcgtt atttggcctt attataatta tggatattga ggggtaagga | 660 |
| cgtagtcata acaacaatta cagtactctt gttatctgag ttatgtttgt cacaaagtct | 720 |
| tatttacatt tgaccatcat catgcactta cctaaaataa gcccgttgtt tattagggaa | 780 |
| gccattatga ttgtcactat cgatatgatt tgtctgcgtc ttgcgccgaa atctatccag | 840 |
| gttttactgg tgaaacgctc taatccaaat cggccagatt gtggtaaatg ggcattgcct | 900 |
| ggcgggtagt tgtatgacga agatatgacc gctcatggtg gagaacctgt cgatgaggat | 960 |
| tttgatgcag cgagacgacg tatttgtcgg caaaaagtcc atacttatcc taattttatc | 1020 |
| agcgatccgc tggttgatgg caaccccaaa cgcgatccga atggttggag tgtcagtatt | 1080 |
| tccattacg ctttattaaa cccgtggaat gtcaaacaaa tagaagattt tggatcgcac | 1140 |
| cccgagcgcg ctaattgggtt tgatcttcat actttactca aagaagaaat gccgctggct | 1200 |
| tttgatcatg tcgcgcaaat tcagcatgcg tggcaaaaat tacgcgctgc ggttgaatac | 1260 |
| acatccgtgg tactattttc attagaaaaa gagtttttag tggcgatatat tattgatgcc | 1320 |
| tacgccaat ttggcgtcga agttaatcgc atgaccatta aacgccgctt gatcaatacc | 1380 |

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| | |
|--|------|
| ggggtgatcg tcagtaccaa taaaatggcc gcatcttgta aaggcaaagg agccaaacca | 1440 |
| gccaccgttt atcgtcttgc cagtcataaa gtcacatttt ttcaaacctg tttacgaggt | 1500 |
| taactgttcg aaaatcgtgt acagtaggtg atgatgtcaa ttgatgatag gtaggaagca | 1560 |
| atgcagatta ttcttgttca tggactctat atgcatggct tggtaatgca tccgcttagt | 1620 |
| catcgtctgc ataaattggg ttatcgtact caaacatta gctacaactc actcgtctatc | 1680 |
| gatgatgagg ccatttttcg ccgccttgac cgatcgctca ctcatgcctc gcctaattgt | 1740 |
| ttagtcggac acagtttggg cggattgggt atcaaactgt atctagaatc gcgcgcaccg | 1800 |
| tcctgtgaaa ccctctccca tgcgtcgc atcggctcac ctttgcaagg agcttccatt | 1860 |
| gtcaataaaa ttgagcaatt aggttttagg gtggcactag gtaattcagc agaatttggg | 1920 |
| ttaaaagaac acgacgacga atcccgtat ccacaaaaat caggcagtat tgcaggaacg | 1980 |
| ataccttttag ggctgcgcag ctttttactg cgcgatccac tggactccga tggtagcgtc | 2040 |
| acagtagaag aaacaaaaat agctggcatg acagatcata tcgcgatatc caccatttca | 2100 |
| tacgagaatg ctgtttaatc attccgttgc cgagcaaatc gaccactttc ttcgttatga | 2160 |
| ccgcttccgg cgctaaagcc gtttaaactt cagatgatag tgtacttcgt atcaaaccga | 2220 |
| tgggtgattga aaacataccc accattcatt cagaataaga cgttgccatc atcagagctt | 2280 |
| tcccatgcaa taaacaatcc gcgactttac gtctggccgc tttaactaaa ttggcaagt | 2340 |
| tctgccgcga tacgctgatg ccgcatagtt aagccagccc cgacacccgc caacacccgc | 2400 |
| tgacgcgccc tgacgggctt gtctgctccc ggcattccgt tacagacaag ctgtgaccgt | 2460 |
| ctccgggagc tgcattgtgc agagggtttc accgtcatca ccgaaacgcg cgagacgaaa | 2520 |
| gggcctcgtg atacgcctat ttttataggt taatgtcatg ataataatgg tttcttag | 2578 |

<210> 2
 <211> 798
 <212> DNA
 <213> Vibrio metschnikovii RH530

<220>
 <221> CDS
 <222> (1)..(798)
 <223> valL1 gene

| | |
|---|-----|
| <400> 2 | |
| atg ttt gtc aca aag tct tat tta cat ttg acc atc atc atg cac tta | 48 |
| Met Phe Val Thr Lys Ser Tyr Leu His Leu Thr Ile Ile Met His Leu | |
| 1 5 10 15 | |
| cct aaa ata agc ccg ttg ttt att agg gaa gcc att atg att gtc act | 96 |
| Pro Lys Ile Ser Pro Leu Phe Ile Arg Glu Ala Ile Met Ile Val Thr | |
| 20 25 30 | |
| atc gat atg att tgt ctg cgt ctt gcg ccg aaa tct atc cag gtt tta | 144 |
| Ile Asp Met Ile Cys Leu Arg Leu Ala Pro Lys Ser Ile Gln Val Leu | |

amended Sequence Listing.txt
40 45

| | | | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 35 | ctg | gtg | aaa | cgc | tct | aat | cca | aat | cgg | cca | gat | tgt | ggt | aaa | tgg | gca | 192 |
| | Leu | Val | Lys | Arg | Ser | Asn | Pro | Asn | Arg | Pro | Asp | Cys | Gly | Lys | Trp | Ala | |
| | | 50 | | | | | 55 | | | | | 60 | | | | | |
| | ttg | cct | ggc | ggg | ata | gtg | tat | gac | gaa | gat | atg | acc | gct | cat | ggt | gga | 240 |
| | Leu | Pro | Gly | Gly | Ile | Val | Tyr | Asp | Glu | Asp | Met | Thr | Ala | His | Gly | Gly | |
| | 65 | | | | | 70 | | | | | 75 | | | | | 80 | |
| | gaa | cct | gtc | gat | gag | gat | ttt | gat | gca | gcg | aga | cga | cgt | att | tgt | cgg | 288 |
| | Glu | Pro | Val | Asp | Glu | Asp | Phe | Asp | Ala | Ala | Arg | Arg | Arg | Ile | Cys | Arg | |
| | | | | | 85 | | | | | 90 | | | | | 95 | | |
| | caa | aaa | gtc | cat | act | tat | cct | aat | ttt | atc | agc | gat | ccg | ctg | gtt | gat | 336 |
| | Gln | Lys | Val | His | Thr | Tyr | Pro | Asn | Phe | Ile | Ser | Asp | Pro | Leu | Val | Asp | |
| | | | | 100 | | | | | 105 | | | | | 110 | | | |
| | ggc | aac | ccc | aaa | cgc | gat | ccg | aat | ggt | tgg | agt | gtc | agt | att | tcc | cat | 384 |
| | Gly | Asn | Pro | Lys | Arg | Asp | Pro | Asn | Gly | Trp | Ser | Val | Ser | Ile | Ser | His | |
| | | | 115 | | | | | 120 | | | | | 125 | | | | |
| | tac | gct | tta | tta | aac | ccg | tgg | aat | gtc | aaa | caa | ata | gaa | gat | ttt | ggt | 432 |
| | Tyr | Ala | Leu | Leu | Asn | Pro | Trp | Asn | Val | Lys | Gln | Ile | Glu | Asp | Phe | Gly | |
| | | 130 | | | | | 135 | | | | | 140 | | | | | |
| | atc | gac | ccc | gag | cgc | gct | aat | tgg | ttt | gat | ctt | cat | act | tta | ctc | aaa | 480 |
| | Ile | Asp | Pro | Glu | Arg | Ala | Asn | Trp | Phe | Asp | Leu | His | Thr | Leu | Leu | Lys | |
| | | | | | | 150 | | | | | 155 | | | | | 160 | |
| | gaa | gaa | atg | ccg | ctg | gct | ttt | gat | cat | gtc | gcg | caa | att | cag | cat | gcg | 528 |
| | Glu | Glu | Met | Pro | Leu | Ala | Phe | Asp | His | Val | Ala | Gln | Ile | Gln | His | Ala | |
| | | | | | 165 | | | | | 170 | | | | | 175 | | |
| | tgg | caa | aaa | tta | cgc | gct | gcg | gtt | gaa | tac | aca | tcc | gtg | gta | cta | ttt | 576 |
| | Trp | Gln | Lys | Leu | Arg | Ala | Ala | Val | Glu | Tyr | Thr | Ser | Val | Val | Leu | Phe | |
| | | | | 180 | | | | | 185 | | | | | 190 | | | |
| | tca | tta | gaa | aaa | gag | ttt | tta | gtg | gcg | gat | att | att | gat | gcc | tac | gcc | 624 |
| | Ser | Leu | Glu | Lys | Glu | Phe | Leu | Val | Ala | Asp | Ile | Ile | Asp | Ala | Tyr | Ala | |
| | | | 195 | | | | | 200 | | | | | 205 | | | | |
| | aaa | ttt | ggc | gtc | gaa | gtt | aat | cgc | atg | acc | att | aaa | cgc | cgc | ttg | atc | 672 |
| | Lys | Phe | Gly | Val | Glu | Val | Asn | Arg | Met | Thr | Ile | Lys | Arg | Arg | Leu | Ile | |
| | | 210 | | | | | 215 | | | | | 220 | | | | | |
| | aat | acc | ggg | gtg | atc | gtc | agt | acc | aat | aaa | atg | gcc | gca | tct | tgt | aaa | 720 |
| | Asn | Thr | Gly | Val | Ile | Val | Ser | Thr | Asn | Lys | Met | Ala | Ala | Ser | Cys | Lys | |
| | | | | | | 230 | | | | | 235 | | | | | 240 | |
| | ggc | aaa | gga | gcc | aaa | cca | gcc | acc | gtt | tat | cgt | ctt | gcc | agt | cat | gaa | 768 |
| | Gly | Lys | Gly | Ala | Lys | Pro | Ala | Thr | Val | Tyr | Arg | Leu | Ala | Ser | His | Glu | |
| | | | | | 245 | | | | | 250 | | | | | 255 | | |
| | gtc | acc | tat | ttt | caa | acc | tgt | tta | cga | ggt | | | | | | | 798 |
| | Val | Thr | Tyr | Phe | Gln | Thr | Cys | Leu | Arg | Gly | | | | | | | |
| | | | | 260 | | | | | 265 | | | | | | | | |

<210> 3
 <211> 266
 <212> PRT
 <213> Vibrio metschnikovii RH530

amended Sequence Listing.txt

<400> 3
Met Phe Val Thr Lys Ser Tyr Leu His Leu Thr Ile Ile Met His Leu
1 5 10 15
Pro Lys Ile Ser Pro Leu Phe Ile Arg Glu Ala Ile Met Ile Val Thr
20 25 30
Ile Asp Met Ile Cys Leu Arg Leu Ala Pro Lys Ser Ile Gln Val Leu
35 40 45
Leu Val Lys Arg Ser Asn Pro Asn Arg Pro Asp Cys Gly Lys Trp Ala
50 55 60
Leu Pro Gly Gly Ile Val Tyr Asp Glu Asp Met Thr Ala His Gly Gly
65 70 75 80
Glu Pro Val Asp Glu Asp Phe Asp Ala Ala Arg Arg Arg Ile Cys Arg
85 90 95
Gln Lys Val His Thr Tyr Pro Asn Phe Ile Ser Asp Pro Leu Val Asp
100 105 110
Gly Asn Pro Lys Arg Asp Pro Asn Gly Trp Ser Val Ser Ile Ser His
115 120 125
Tyr Ala Leu Leu Asn Pro Trp Asn Val Lys Gln Ile Glu Asp Phe Gly
130 135 140
Ile Asp Pro Glu Arg Ala Asn Trp Phe Asp Leu His Thr Leu Leu Lys
145 150 155 160
Glu Glu Met Pro Leu Ala Phe Asp His Val Ala Gln Ile Gln His Ala
165 170 175
Trp Gln Lys Leu Arg Ala Ala Val Glu Tyr Thr Ser Val Val Leu Phe
180 185 190
Ser Leu Glu Lys Glu Phe Leu Val Ala Asp Ile Ile Asp Ala Tyr Ala
195 200 205
Lys Phe Gly Val Glu Val Asn Arg Met Thr Ile Lys Arg Arg Leu Ile
210 215 220
Asn Thr Gly Val Ile Val Ser Thr Asn Lys Met Ala Ala Ser Cys Lys
225 230 235 240
Gly Lys Gly Ala Lys Pro Ala Thr Val Tyr Arg Leu Ala Ser His Glu
245 250 255
Val Thr Tyr Phe Gln Thr Cys Leu Arg Gly
260 265

<210> 4
<211> 555
<212> DNA
<213> Vibrio metschnikovii RH530
<220>
<221> CDS
<222> (1)..(555)
<223> valL2 gene

amended Sequence Listing.txt

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<400>      4
atg cag att att ctt gtt cat gga ctc tat atg cat ggc ttg gta atg      48
Met Gln Ile Ile Leu Val His Gly Leu Tyr Met His Gly Leu Val Met
  1           5           10           15

cat ccg ctt agt cat cgt ctg cat aaa ttg ggt tat cgt act caa acc      96
His Pro Leu Ser His Arg Leu His Lys Leu Gly Tyr Arg Thr Gln Thr
           20           25           30

att agc tac aac tca ctc gct atc gat gat gag gcc att ttt cgc cgc      144
Ile Ser Tyr Asn Ser Leu Ala Ile Asp Asp Glu Ala Ile Phe Arg Arg
           35           40           45

ctt gac cga tcg ctc act cat gcc tcg cct aat gct tta gtc gga cac      192
Leu Asp Arg Ser Leu Thr His Ala Ser Pro Asn Ala Leu Val Gly His
           50           55           60

agt ttg ggc gga ttg gtg atc aaa cgt tat cta gaa tcg cgc gca ccg      240
Ser Leu Gly Gly Leu Val Ile Lys Arg Tyr Leu Glu Ser Arg Ala Pro
           65           70           75

tcc tgt gaa acc ctc tcc cat gtc gtc gcc atc ggc tca cct ttg caa      288
Ser Cys Glu Thr Leu Ser His Val Val Ala Ile Gly Ser Pro Leu Gln
           85           90           95

gga gct tcc att gtc aat aaa att gag caa tta ggt tta ggg gtg gca      336
Gly Ala Ser Ile Val Asn Lys Ile Glu Gln Leu Gly Leu Gly Val Ala
           100           105           110

cta ggt aat tca gca gaa ttt ggg tta aaa gaa cac gac gac gaa tcc      384
Leu Gly Asn Ser Ala Glu Phe Gly Leu Lys Glu His Asp Asp Glu Ser
           115           120           125

cgc tat cca caa aaa tca ggc agt att gca gga acg ata cct tta ggg      432
Arg Tyr Pro Gln Lys Ser Gly Ser Ile Ala Gly Thr Ile Pro Leu Gly
           130           135           140

ctg cgc agc ctt tta ctg cgc gat cca ctg gac tcc gat ggt acc gtc      480
Leu Arg Ser Leu Leu Leu Arg Asp Pro Leu Asp Ser Asp Gly Thr Val
           145           150           155

aca gta gaa gaa acc aaa ata gct ggc atg aca gat cat atc gcg ata      528
Thr Val Glu Glu Thr Lys Ile Ala Gly Met Thr Asp His Ile Ala Ile
           165           170           175

tcc acc act tca tac gag aat gct gtt      555
Ser Thr Thr Ser Tyr Glu Asn Ala Val
           180           185

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<210>      5
<211>      185
<212>      PRT
<213>      Vibrio metschnikovii RH530

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```

<400>      5
Met Gln Ile Ile Leu Val His Gly Leu Tyr Met His Gly Leu Val Met
  1           5           10           15

His Pro Leu Ser His Arg Leu His Lys Leu Gly Tyr Arg Thr Gln Thr
           20           25           30

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amended Sequence Listing.txt

Ile Ser Tyr Asn Ser Leu Ala Ile Asp Asp Glu Ala Ile Phe Arg Arg
35 40 45
Leu Asp Arg Ser Leu Thr His Ala Ser Pro Asn Ala Leu Val Gly His
50 55 60
Ser Leu Gly Gly Leu Val Ile Lys Arg Tyr Leu Glu Ser Arg Ala Pro
65 70 75 80
Ser Cys Glu Thr Leu Ser His Val Val Ala Ile Gly Ser Pro Leu Gln
85 90 95
Gly Ala Ser Ile Val Asn Lys Ile Glu Gln Leu Gly Leu Gly Val Ala
100 105 110
Leu Gly Asn Ser Ala Glu Phe Gly Leu Lys Glu His Asp Asp Glu Ser
115 120 125
Arg Tyr Pro Gln Lys Ser Gly Ser Ile Ala Gly Thr Ile Pro Leu Gly
130 135 140
Leu Arg Ser Leu Leu Leu Arg Asp Pro Leu Asp Ser Asp Gly Thr Val
145 150 155 160
Thr Val Glu Glu Thr Lys Ile Ala Gly Met Thr Asp His Ile Ala Ile
165 170 175
Ser Thr Thr Ser Tyr Glu Asn Ala Val
180 185

<210> 6
<211> 117
<212> PRT
<213> Pseudomonas glumae

<400> 6
Val Ala Asn Leu Ser Gly Phe Gln Ser Asp Asp Gly Pro Asn Gly Arg
1 5 10 15
Gly Glu Gln Leu Leu Ala Tyr Val Lys Gln Val Leu Ala Thr Thr Gly
20 25 30
Ala Thr Lys Val Asn Leu Ile Gly His Ser Gln Gly Gly Leu Thr Ser
35 40 45
Arg Tyr Val Ala Ala Val Ala Pro Gln Leu Val Ala Ser Val Thr Thr
50 55 60
Ile Gly Thr Arg His Arg Gly Ser Glu Phe Ala Asp Phe Val Gln Asp
65 70 75 80
Val Leu Lys Thr Asp Pro Thr Gly Leu Ser Ser Thr Val Ile Ala Ala
85 90 95
Phe Val Asn Val Phe Gly Thr Leu Val Ser Ser Ser His Asn Thr Asp
100 105 110
Gln Asp Ala Leu Ala
115

amended Sequence Listing.txt

```

<210>      7
<211>      117
<212>      PRT
<213>      Burkholderia cepacia

<400>      7
Val Ala Asn Leu Ser Gly Phe Gln Ser Asp Asp Gly Pro Asn Gly Arg
 1          5          10          15
Gly Glu Gln Leu Leu Ala Tyr Val Lys Gln Val Leu Ala Thr Thr Gly
          20          25          30
Ala Thr Lys Val Asn Leu Val Gly His Ser Gln Gly Gly Leu Ser Ser
          35          40          45
Arg Tyr Val Ala Ala Val Ala Pro Gln Leu Val Ala Ser Val Thr Thr
          50          55          60
Ile Gly Thr Arg His Arg Gly Ser Glu Phe Ala Asp Phe Val Gln Asp
 65          70          75          80
Val Leu Ala Tyr Asp Pro Thr Gly Leu Ser Ser Ser Val Ile Ala Ala
          85          90          95
Phe Val Asn Val Phe Gly Ile Leu Thr Ser Ser Ser His Asn Thr Asn
          100          105          110
Gln Asp Ala Leu Ala
          115

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